to the following conclusions. The two species growing together in Little Sycamore Canyon occupy sufficiently different microhabitats so that they are not in direct competition. Their breeding systems are sufficiently different so that they do not even compete for the same pollinator. The two sympatric populations show no differences from other populations of their species, so that neither character displacement nor introgression have occurred. Thus, the normally allopatric distribution cannot be attributed to competitive exclusion, rather the populations must be though of as ecologically quite different, and it is this difference which causes their difference in geographical distribution.

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Literature Cited

Cave, M., and L. Constance. 1942. Chromosome numbers in the Hydrophyllaceae. Univ. Calif. Publ. Bot. 18: 205–216; 1947. III. 18:449–465; 1959. V. 30:233–257.

Constance, L., 1939. The genus Pholistoma Lilja. Bull. Torrey Club 66:341–352.

Raven, P. H., 1963. A flora of San Clemente Island, California. Aliso 5:289–347.

A PRELIMINARY REPORT OF THE MYXOMYCETES OF CRATER LAKE NATIONAL PARK, OREGON

Dwayne H. Curtis

Crater Lake National Park is located in southeastern Oregon where volcanic activity and glaciers shaped the surrounding mountains and valleys. During the winter months the park is noted for an abundance of snow accumulation, often exceeding 50 feet of measured depth from November to May. The average annual precipitation is about 70 inches. In contrast, the summer is quite dry since very little rain falls during the months of July and August. The flora in the park must withstand the extreme weather conditions in order to survive. It is common to observe living trees bent from the shifting snow. In many places the forest floor is covered with broken limbs and fallen trees.

Slime molds or Myxomycetes are characteristically associated with moist areas on decaying organic matter such as duff, wood, bark, and fallen twigs. An ideal habitat for slime molds is formed on the fallen logs and forest litter dampened by the large amount of water from the melting snow.

The collections for this report were obtained during the summers of 1966 and 1967. The 43 species, listed here, were collected in the field on some form of decaying wood or duff at altitudes from 4,000 to 7,500 feet. At least one collection of each species has been deposited in the University of Iowa Herbarium, Iowa City, Iowa and where possible, du-

plicate specimens have been given to the Crater Lake National Park Herbarium, Crater Lake, Oregon. The numbers given for the collections are my own and they indicate only those specimens given to the University of Iowa Herbarium.

Ceratiomyxaceae

Ceratiomyxa fructiculosa (Müll.) Macbr. On decayed wood, Kerr Valley, 6,500 feet, *48,* July 28, 1966.

Liceaceae

Lisea minima Fries. One collection on decayed wood, Sleepy Hollow Creek area, 6,500 feet, *16,* June 18, 1966.

L. pusilla Schrad. One collection on decayed coniferous wood, 0.2 miles north of Park Headquarters, 6,500 feet, *6,* June 15, 1966. This exceedingly tiny species was recently reported by Kowalski (1966) from California. Previously, it had only been found as far west as Iowa, and is considered rare.

Reticulariaceae

Lycogala epidendrum (L.) Fries. On decayed wood, Grouse Hill, 7,000 feet, *832,* June 29, 1967.

L. flavofuscum (Ehrenb.) Rost. I obtained only one aethalium on the side of a dead, barkless stump about 4 feet above the ground on the east side of Kerr Valley, 6,500 feet, *52,* July 28, 1966.

Enteridium olivaceum Ehrenb. On decayed wood, Vidae Falls area, 6,500 feet, *859,* July 2, 1967.

Cribrariaceae

Cribraria argillacea (Pers.) Pers. Inside a decaying log, 2 miles south of Park Headquarters, 6,400 feet, *1007,* July 8, 1967.

C. rufa (Roth) Rost. On decayed wood, Kerr Valley, 6,800 feet, *1130,* July 29, 1967.

Lindbladia effusa (Ehrenb.) Rost. One large collection on the side of a decaying log, 0.5 miles west of Rim Village, 6,800 feet, *1083,* July 16, 1967.

Dianemaceae

Dianema andersoni Morgan. One collection on decayed wood, about 2 miles north of Park Headquarters, 6,800 feet, *1067,* July 14, 1967. This Myxomycete has been reported from Washington, British Columbia, and more recently from California (Kowalski and Curtis, 1968). It is considered rare.

D. corticatum Lister. On decayed wood buried in duff, 2 miles north of Park Headquarters, 6,800 feet, *1052,* July 14, 1967. Numerous collections of this slime mold were obtained at elevations from 5,000 to 7,000 feet.

Prototrichia metallica (Berk.) Massee. On decayed wood, Grouse Hill,

7,000 feet, *829,* June 29, 1967. This Myxomycete is very common throughout the park.

Trichiaceae

Arcyria versicolor Phill. On bark, 0.5 miles west of Rim Village, 6,800 feet, *1114,* July 18, 1967. Several specimens were collected at elevations from 6,000 to 7,000 feet.

Hemitrichia karstenii (Rost.) Lister. On the bark of a small fallen twig, 4 miles north of the south park boundry, 5,000 feet, *779,* June 17, 1967.

H. montana (Morgan) Macbr. On decayed wood, 2 miles south of Park Headquarters on Munson Ridge, 6,500 feet, *67,* August 4, 1966. This Myxomycete is very common in the park at elevations from 6,000 to 7,000 feet.

Oligonema schweinitzii (Berk.) G. W. Martin. On decayed wood, Goodbye Creek area, 6,000 feet, *748,* June 14, 1967.

Trichia affinis De Bary. On decayed wood, 1 mile northeast of Park Headquarters, 6,650 feet, *45,* July 18, 1966.

T. contorta (Ditmar) Rost. On fallen twigs, 0.5 miles west of Rim Village, 6,800 feet, *1077,* July 16, 1967.

T. favoginea (Batsch) Pers. On decayed wood, Lightning Springs area, 6,800 feet, *71,* August 16, 1966.

T. lutescens Lister. One collection on duff, Sleepy Hollow Springs area, 6,600 feet, *794,* June 25, 1967.

T. pusilla (Hedw.) G. W. Martin. On decayed wood, Sleepy Hollow Springs area, 6,500 feet, *810,* June 28, 1967.

T. varia (Pers.) Pers. One collection on decayed wood, Annie Creek near park boundary, 4,400 feet, *20,* June 18, 1966.

Stemonitaceae

Barbeyella minutissima Meylan. One collection of three sporangia on decayed wood, 0.5 miles south of Park Headquarters on Munson Ridge, 6,600 feet, *782,* June 22, 1967. I (Curtis, 1968) recently reported the occurrence of this exceedingly rare Myxomycete from the park. Previously, it had only been reported from Switzerland, Poland, and Japan.

C. fusiforme Kowalski. On decayed wood, 1 mile south of Vidae Falls, 6,700 feet, *883,* July 3, 1967. This Myxomycete is very common in the park at elevations from 5,000 to 7,000 feet.

C. nigra (Pers.) Schroet. On decayed wood, Grouse Hill, 7,000 feet, *830,* June 29, 1967.

C. pacifica (Macbr.) Peck & Gilbert. On bark and twigs, 0.3 miles kest of Goodbye Creek and the Park Road, 6,000 feet, *897,* June 15, 1967.

C. suksdorfii Ellis & Ev. On bark, Munson Point, 7,000 feet, *757,* July 4, 1967. Numerous collections were obtained throughout the park at elevations from 5,700 to 7,100 feet.

C. typhoides (Bull.) Rost. One collection on decayed wood, Goodbye Springs area, 6,300 feet, *73,* September 7, 1966.

Enerthenema melanospermum Macbr. & Mart. On decayed wood, Grouse Hill, 7,000 feet, *848,* June 29, 1967.

Lamproderma arcyrioides (Sommerf.) Rost. On decayed twigs, Sleepy Holly Springs area, 6,600 feet, *1015,* July 9, 1967. A slime mold commonly found throughout the park.

L. biasperosporum Kowalski. One collection on the side of a decaying log, 0.5 miles west of Rim Village, 6,800 feet, *1068,* July 14, 1967. This rare Myxomycete was recently described by Kowalski (1968). It has only been reported from California, Kentucky, and Oregon.

L. carestiae (Ces. & De-Not.) Meylan. On decayed twigs, Grouse Hill, 7,000 feet, *842,* June 29, 1967.

L. sauteri Rost. On bark, Sleepy Hollow Springs area, 6,600 feet, *804,* June 25, 1967.

Physaraceae

Fuligo septica (L.) Webber. On a decaying log, White Horse Creek area, 5,700 feet, *58,* August 3, 1966.

Physarum albescens Macbr. On decayed twigs, 1.5 miles southeast of Park Headquarters, 6,600 feet, *940,* July 6, 1967. Numerous specimens of this Myxomycete were collected in the park.

P. auripigmentum G. W. Martin. Beneath layers of decayed wood on a fallen log, 2 miles south of Park Headquarters, 6,400 feet, *1006,* July 8, 1967.

P. decipiens Curt. On decayed twigs, Sleepy Hollow Springs area, 6,600 feet, *1012,* July 9, 1967.

Didymiaceae

Diderma deplanatum Fries. On decayed wood, 0.5 miles west of Goodbye Bridge, 6,000 feet, *762,* June 17, 1967.

D. nigrum Kowalski. One collection on coniferous twigs, 2 miles south of Park Headquarters, 6,200 feet, *1041,* July 10, 1967. This rare Myxomycete was recently described by Kowalski (1968).

D. niveum (Rost.) Macbr. On bark and fallen twigs, 2 miles west of Annie Creek Entrance Station, 6,100 feet, *812,* June 28, 1967. This slime mold occurs throughout the park at elevations from 5,000 to 7,000 feet.

D. subcaeruleum Kowalski. On coniferous twigs, 2 miles south of Park Headquarters, 6,400 feet, *986,* July 8, 1967. Kowalski (1968) recently described this Myxomycete from the park.

Lepidoderma carestianum (Rab.) Rost. One collection on a decayed twig, 0.5 miles west of Rim Village, 6,800 feet, *1109,* July 18, 1967.

L. chailletii Rost. On fallen twigs, Grouse Hill, 7,000 feet, *846,* June 29, 1967.

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Literature Cited

Curtis, D. H. 1968. Barbeyella minutissima Meylan, A new record for the western hemisphere. Mycologia 60:708-710.

Kowalski, D. T. 1966. New records of Myxomycetes from California I. Madroño 18:140-142.

————. 1968. Three new species of Diderma. Mycologia 60:595–603.

————. 1968. Observations on the genus Lamproderma Rost. Mycologia 60:756–768.

————., and D. H. Curtis. 1968. New records of Myxomycetes from California III. Madroño 19:246–249.

A NEW VARARIA FROM WESTERN NORTH AMERICA

Robert L. Gilbertson

Collecting in Alberta in 1964 and 1966 and in Arizona in 1967 has yielded a number of interesting wood-rotting fungi not previously reported from western North America. One of these is a striking species of *Vararia* P. Karst. (Basidiomycetes-Thelephoraceae s.l.) described as new in this paper.

Vararia athabascensis Gilbertson, sp. nov. Fructification effusa, ochracea vel incarnata, 30–350 μ crassa; hyphae nodoso-septatae, 2–3.5 μ diam; dichohyphidia abundanta, 1–3 μ diam, tunicus densus, dextrinoideus; gloeocystidia abundanta, tenitunicata, sinuoso-constricta vel cylindracea, 3–10 μ diam; basidia cylindracea-clavata, 30–40 $\times$ 6–6.5 μ, 4-sterigmatibus; basidiosporae tenuitunicatae, laeves, hyalinae, subclavatae, subarcutatae, non-amyloideae, 11–16 $\times$ 3–5 μ.

Type. Canada, Alberta. Along Athabasca River, Jasper National Park, on *Pinus contorta* Dougl., *Gilbertson 4752,* July 21, 1964 (BPI-holotype).

Basidiocarps annual, effused in small patches up to 10 cm long, 30–350 μ thick, not readily separable; margin not differentiated, abrupt to thinning out; hymenial surface Pale Ochraceous-Buff to Pinkish-Buff when fresh and on drying, cracking on drying, finely tomentose under a 30x lens; subiculum concolorous with hymenial surface, soft, easily sectioned, uniform in color and consistency.

Sections not darkening in KOH solution, darkening in Melzer's reagent; generative hyphae of subiculum difficult to discern, thin-walled, nodose-septate, 2–3.5 μ in diam (fig. 1a) giving rise to the dichohyphidia and gloeocystidia which are the conspicuous elements of the subiculum; gloeocystidia abundant, imbedded in subiculum and projecting from hymenial region, staining deeply in phloxine and also strongly positive in sulfobenzaldehyde reagent, spherical to elongated, up to 10 μ in diam,